Agency: Commerce, Community and Economic Development

Grants to Municipalities (AS 37.05.315)

Grant Recipient: Fairbanks (City of)

Project Title:

Fairbanks (City of) - Traffic Calming Demonstration Project

State Funding Requested: $ 250,000 **House District:** 10 - E

One-Time Need

Brief Project Description:

Design and installation of speed "humps" and traffic circles at locations designed to slow traffic, improve pedestrian safety and neighborhood tranquility.

Funding Plan:

Total Cost of Project: $250,000

Funding Secured		Other Pending Requests		Anticipated Future Need	
Amount	*FY*	*Amount*	*FY*	*Amount*	*FY*

There is no other funding needed

Detailed Project Description and Justification:

In 2007, Fort Wainwright terminated an agreement with a private housing provider for on-base housing and directed all traffic from the 400+ unit project (now known as Birchwood Homes) onto F-Street in Hamilton Acres. The resulting increase in traffic greatly concerned the neighborhood. The City proposes to plan and build traffic-calming alterations to City streets to include speed "humps" and traffic circles.

Project Timeline:

This project could be completed in 2008.

Entity Responsible for the Ongoing Operation and Maintenance of this Project:

The City of Fairbanks

Grant Recipient Contact Information:

Contact Name: Mike Schmetzer, City Engineer/Public Works Director
Phone Number: 907-459-6740
Address: 800 Cushman Street Fairbanks, AK 99701
Email: mjschmetzer@ci.fairbanks.ak.us

Has this project been through a public review process at the local level and is it a community priority? [X] Yes [ ] No

For use by Co-chair Staff Only:

Contact Name: Emily Beatley
Contact Number: 465-6841

4:55 PM 4/29/2008

City of Fairbanks

Hamilton Acres Traffic Calming

Who is the recipient?
City of Fairbanks – Public Works Department

Please select a municipality:
City of Fairbanks

What is the project title:
Traffic Calming Demonstration Project

Brief Description of the Project:
In 2007, Fort Wainwright terminated an agreement with a private housing provider for on-base housing and directed all traffic from the 400+ unit project (now known as Birchwood Homes) onto F-Street in Hamilton Acres. The resulting increase in traffic greatly concerned the neighborhood. The City proposes to plan and build traffic-calming alterations to City streets to include speed "humps" and traffic circles.

Total cost of the projects from inception to completion:
The full project is estimated at $250,000, which could be scaled up or down depending on scope

FY09 Funding Requested from the State, if different from above, otherwise leave blank.

If your project is funded this year, will you be requesting state funding again?
Not for this area of the City

Funding Plan:
City staff have already spent considerable time on this project, including preliminary design and neighborhood meetings that would not be charged to further work.

Please list any non-state funding currently requested but not yet secured:
None.

If you need additional funding to complete this project, please indicate below from whom you intend to secure that funding:
No co-funding entities currently identified

Please provide a detailed project description and project justification:
Design and installation of speed "humps" and traffic circles at locations designed to slow traffic and improve pedestrian safety and neighborhood tranquility. Sketch attached. See above: further information available from staff.

Has the project gone through a public review process at the local level, and is it a community priority demonstrated by resolution or other official action by the governing body?
There have been a number of City Council and neighborhood meetings on traffic concerns in Hamilton Acres, however, this project came to fruition after the City Council passage of Resolution 4302.

Please describe the project timeline, and when expenditures will occur:
Could be finished in 2008.

Who will be responsible for providing the ongoing maintenance and operations cost?
The City of Fairbanks

Grant Recipient Contact information:
Michael Schmetzer, City Engineer/Public Works Director
800 Cushman Street
Fairbanks, AK 99701
(907) 459-6740
mjschmetzer@ci.fairbanks.ak.us

Introduction

This preliminary design study was initiated in response to reported concerns about vehicles speeding and ignoring stop signs from residents of Hamilton Acres and Shannon Park. This report was prepared to summarize traffic issues that affect the quality of life for residents in the subdivisions and to determine if speed humps and traffic circles may be a viable solution to improve pedestrian safety while maintaining adequate traffic flow. Other traffic calming measures were considered for this project, but they are usually more expensive unless included as part of a street rehabilitation project. Speed humps are generally placed in a whole neighborhood or in conjunction with other traffic calming methods since they will tend to divert traffic to nearby streets that are left untreated. Traffic circles are used in select locations and are good for delineating special features or neighborhood entrances. With very limited traffic count data or traffic speed data, it will be difficult to assess the impact of the traffic calming other than by questionnaire.

Existing Conditions

Hamilton Acres is an older residential family neighborhood (see Figure 1). There are three public schools in the neighborhood including Nordale Elementary School, Tanana Middle school, and Ladd Elementary School. There are at least two private schools as well. It is bounded to the west by Hamilton Avenue, the south by the Chena River, the east by F Street, and the north by Adak Avenue west of Trainor Gate Road and Baranof Avenue east of Trainor Gate Road. For the purpose of cost breakdown in this report, Hamilton Acres is further divided into Hamilton Acres North and Hamilton Acres South with Farewell Avenue serving as the dividing line.

Streets in Hamilton Acres are aligned in a grid pattern consisting of straight wide streets. The long sight distance and wide streets have been found to increase driver speed. The posted speed limit on the local streets is 20 mph, while Farewell Avenue, a collector street, has a higher posted limit of 30 mph, except in school zones where the speed limit is 20 mph. The primary concern of neighborhood residents is pedestrian safety—especially the safety of children on the streets.

Shannon Park is a residential family neighborhood (see Figure 1). There are no schools in the neighborhood, but many of the children here walk to those in Hamilton Acres. Shannon Park is bounded by the Steese Highway to the west, Lazelle Estates to the north, Fort Wainwright to the east, and Hamilton Acres to the south.

Shannon Park consists of wide streets with gentle curves. Sight distance is mostly good, though generally is not as lengthy as it is for Hamilton Acres. D Street is the exception, being a long, straight, and wide street that cuts through the neighborhood, offering access to Shannon Park from both the north and south ends. Traffic concerns are similar to those in Hamilton Acres—that speeding cars are endangering their children is the primary concern. The posted speed limit on the local streets is 20 mph, while Trainor Gate Road, a collector street, has a higher posted limit of 35 mph. Failure of vehicles to stop at stop signs is also a concern of both neighborhoods.

Little actual traffic data exists to back up the concerns of residents. Based on experience, a previous traffic report, and what residents have said, primarily north-south

local streets tend to have the higher traffic counts for both neighborhoods since they are used to access the area. East-west tending streets are mostly used to access homes on that street. Exceptions likely include Baranof Avenue, a local street that is often used by cut-through traffic, Eureka Avenue near the elementary school, and Shannon Drive.

Currently there are many unwarranted 4-way stops in place to attempt to slow traffic in both Hamilton Acres and Shannon Park. Many residents of both neighborhoods have approached the city requesting additional stop signs to slow traffic, but the extra signs have been shown to be ineffective at slowing traffic (FHWA) and the Institute of Traffic Engineers (ITE) strongly discourages the use of unwarranted stop signs (ITE, January 2008).

Street pavement condition and street widths are unknown at this time and the streets are snow-covered, so streets will need to be assessed in the spring after snowmelt has occurred. Pavement condition could affect the recommendations of this report and street widths could affect the cost data. Estimated street width is approximately 30 feet.

Public Involvement

Hamilton Acres residents held a meeting on October 16, 2007 regarding the new access on F Street to Birchwood Homes, a 400-unit residential subdivision. Residents expressed concern that the increased traffic though their neighborhood would create more safety issues for children and pedestrians. While the increase in traffic cannot be prevented, a traffic calming project in this area could increase safety by slowing speeding traffic in the neighborhood. Further discussion led to the consideration of a traffic calming program to encompass both Hamilton Acres and Shannon Park.

All potentially affected parties in Hamilton Acres and Shannon Park should be contacted before final design to determine any issues they may have with traffic calming measures being considered. Other cities typically have a program requiring passing a petition and having a minimum percentage of residents desire traffic calming measures in their neighborhood. The City of Fairbanks currently has no traffic calming policy, but will likely employ a policy that includes requiring such a petition in the future. Other potentially affected parties that should be contacted include: Fairbanks Police Dept., Fairbanks Fire Dept., Fairbanks Public Works Dept., public transportation (FNSB MACS bus routes), school bus transportation (Laidlaw), DOT, AK RR, FNSB School District, and Utility companies.

Traffic Study

A traffic study must be conducted before design and installation of calming measures to determine existing characteristics of neighborhood traffic that may affect recommendations. A traffic study should be done again after installation of traffic calming to determine if the measures taken were effective. Both volume and speed data should be collected as part of the studies. Typical criteria for traffic calming measures include a minimum average daily traffic flow and a minimum 85^{th} percentile speed. The 85^{th} percentile speed is the speed that 85 percent of vehicles travel at or below. The City will formulate a policy to set these minimums, however, for this pilot study the policy has not been determined yet. In the absence of City policy, general accepted practice guidelines will be used to determine if traffic calming is warranted in the neighborhoods.

Traffic Calming Principles/Alternatives

The Institute of Traffic Engineers defines traffic calming as ". . . the combination of mainly physical measures that reduce the negative effects of motor vehicle use, alter driver behavior and improve conditions for non-motorized street users." This is the commonly accepted definition among traffic engineers. This means that traffic calming measures do not rely on enforcement like a regulatory measure (ex. stop sign), but instead are self-enforcing which is what makes them so effective.

Methods of traffic calming available to the designer include: Speed humps, traffic circles, chicanes, lane closures, street closures, median barriers, diverters, speed tables, raised intersections, chokers, and lateral shifts. While various methods of traffic calming were considered for these neighborhoods, most are more expensive to install on already constructed streets, some require curbs, and some require street lengths that are not available to construct them. Speed humps and traffic circles were requested by residents and have been shown to slow traffic, which addresses their primary concern. In addition, these measures would enable removing unwarranted stop signs, which often improves motorist compliance to them.

Speed humps are used in many communities due to being safe and effective, and they are generally less expensive than other options. Traffic circles, while more expensive than speed humps, are also an effective deterrent to excess speed. They also may serve as a decorative feature of a neighborhood, especially when plants are added to the circle, and create a sense of community.

The primary concern with speed humps and traffic circles is that they will slow emergency response vehicles. A study on response times showed that response time decreased from 2-10 seconds per speed hump or traffic circle (ITE, 1999). Because of this their use should be limited to local streets. Other considerations for the placement of speed humps include proper spacing apart to maintain slowed speeds between, and appropriate distance from driveways, utilities, and intersections.

Speed Humps

Speed humps are different from the familiar speed bumps. A speed *bump* is generally the full width of the street, three to six inches in height, and from just inches to three feet in length. They are designed to slow a vehicle down to 5 miles per hour or less. A speed *hump* is generally the full width of the street, three to four inches in height, and *12 feet or more in length.* This much longer length means that they can be designed to slow cars on residential streets to typical speed limits for those areas but still permit reasonable traffic flow. Bicycles and motorcycles are better able to maintain control going over speed humps than speed bumps.

Permanent or temporary speed humps can be installed on existing streets if the pavement is in good condition and are generally a cost effective solution to slow traffic that is traveling in excess of the design speed of the hump. They are successfully used in many major cities in the US (Portland, OR; Seattle, WA; Oakland, CA; Phoenix, AZ) including some cold-weather regions that have to deal with snow removal (Anchorage, AK; Boulder, CO; Whistler, BC).

Anchorage has used both temporary and permanent speed humps successfully. Appendix A is a copy of their Temporary Speed Hump Program guide for installation of temporary speed humps. Temporary speed humps are for summer use only and must be removed every fall as snow removal equipment will peel them up, then reinstalled in spring. To accommodate snow removal over permanent speed humps, geometric guidelines developed in Canada use a slightly different shape of hump than that used in most of the United States. The *Canadian Guide to Neighbourhood Traffic Calming* describes the parabolic shape that Anchorage successfully uses for its permanent speed humps.

Traffic circles

Traffic circles are similar to roundabouts, but on a much smaller scale. They consist of a small round or oval-shaped island in the middle of an intersection. They may be landscaped or concrete. This is often decided in other communities on the basis of if the neighborhood is willing to maintain the landscaping in a way that does not interfere with a driver's ability to see other vehicles. If not, then concrete is used.

Traffic circles slow traffic by not allowing a straight-through path and by requiring vehicles to yield before entering the circle. They are usually designed with mountable curbs to accommodate emergency vehicles or other large vehicles. The proposed locations will allow larger vehicles to choose other streets to avoid the circles, though it will be a longer route or one with speed humps instead. Another alternative for larger vehicles attempting a left turn is to allow those over a specified length to take an immediate left rather than going around the circle. This resolves many vehicle length issues and is used in many communities without incident.

Proposed Traffic Calming and Preliminary Cost

Temporary speed humps are proposed for use on this project. This allows the community a chance to try them out and determine if they are well-received. Traffic circles are proposed in select locations. Locations for installing speed humps and traffic circles will have to be determined after a traffic study, but preliminary proposed locations are shown on Figure 1. For the main collector streets in these neighborhoods no traffic calming is recommended at this time. These include Trainor Gate Road and Farewell Avenue. This is to maintain traffic flow and allow emergency access with minimal delays.

Local streets on the east-west routes generally will be controlled by stop signs on every block assuming they have the lower traffic flow, so no speed humps are recommended for these streets at this time. Exceptions are Shannon Drive, Baranof Avenue, and Eureka Avenue.

Primarily north-south local streets tend to have the higher traffic flow since they are used for entering and leaving the neighborhoods. The higher volume streets should generally not be stop sign-controlled according to the Manual on Uniform Traffic Control Devices (MUTCD) and Alaska Supplement guidelines and standards. Speed humps are proposed on these streets if warranted by a traffic study and if a field study shows they are constructible. They would mostly spaced at approximately 200- to 300-foot intervals as recommended by ITE (1999), but the exact spacing must take into consideration block length, distance from intersections, driveway locations, utility locations, drainage,

and any other site specific concerns. Non-warranted stop signs should be removed on these north-south streets, leaving the east-west streets stop sign controlled.

Traffic circles are proposed in four select locations with special concerns. Two are near Nussbaumer Park, where neighborhood children like to play. One is at the intersection of Shannon Drive and Joyce Drive, which is a particular stop sign that residents report is commonly disregarded. The fourth is located at the intersection of D Street and Jeanne Drive in Shannon Park. This intersection was selected due to reports from area residents that D Street is commonly used for cut-through traffic from north of Lazelle Estates, and the cut-through traffic often tends to drive faster than typical neighborhood traffic. As with the speed humps, these preliminary locations will have to be verified with field and traffic data to determine if they are feasible, constructible, and warranted. Street width at the intersections must be able to accommodate the circles and maintain emergency vehicle access. If streets require widening or if right-of-way is required for construction of traffic circles then they are generally not feasible.

A preliminary cost estimate has been prepared for the proposed speed humps and traffic circles as shown on Table 1.

Shannon Park	Qty	Cost Each	Total
Speed Humps	13	$ 3,000	$ 39,000
Traffic Circles	2	$ 15,000	$ 30,000
Total			$ 69,000

Hamilton Acres North of Farewell	Qty	Cost Each	Total
Speed Humps	16	$ 3,000	$ 48,000
Traffic Circles	0	$ 15,000	$ -
Total			$ 48,000

Hamilton Acres South of Farewell	Qty	Cost Each	Total
Speed Humps	14	$ 3,000	$ 42,000
Traffic Circles	2	$ 15,000	$ 30,000
Total			$ 72,000

Total for all 3 Neighborhoods			$ 189,000
Preliminary Engineering & Construction Administration	10%	18,900.0	$ 214,000
Contingency	20%	41,580.0	$ 256,800

Table 1: Preliminary construction cost estimate for Hamilton Acres and Shannon Park proposed traffic calming.

Conclusion

A pilot traffic calming program is recommended for the neighborhoods of Hamilton Acres and Shannon Park if field surveys show it can be feasibly constructed and a traffic study

can confirm it is warranted. A petition should be passed around theses neighborhoods by interested residents to confirm that a majority of the neighborhood residents want the devices placed. By using temporary speed humps, the City can easily remove them if residents decide they do not like them. If they are well-received, then the next step will be to secure funding for placement of permanent speed humps.

References

City of Portland. Office of Transportation. Portland, OR. http://www.portlandonline.com/transportation/index.cfm?c=40520. Accessed January 4, 2008.

Ewing, Reid. *Traffic Calming State of the Practice.* Prepared by the Institute of Transportation Engineers. Federal Highway Administration, U.S. Department of Transportation, Washington, D.C., August 1999.

Federal Highway Administration, U.S. Department of Transportation, Washington, D.C., http://safety.fhwa.dot.gov/intersections/interbriefing/10myth.htm. Accessed January 8, 2008.

Institute of Traffic Engineers. *Guidelines for the Design and Application of Speed Humps: A Proposed Recommended Practice of the Institute of Traffic Engineers.* 2007. 65 pp.

Institute of Traffic Engineers. Washington D. C. http://www.ite.org/ Accessed January 8, 2008.

Municipality of Anchorage. Traffic Department. Anchorage, AK. http://www.muni.org/traffic/. Accessed January 4, 2008.

Transportation Association of Canada. *Canadian Guide to Neighbourhood Traffic Calming,* The. 1998. 100 pp.

Figures

Figure 1: Hamilton Acres-Shannon Park Traffic Calming Pilot Project, Map of Proposed Measures

Appendices

Appendix A: Anchorage Temporary Speed Hump Program

NOTES

1. SPEED HUMPS AND TRAFFIC CIRCLES NOT DRAWN TO SCALE.
2. NEIGHBORHOOD BOUNDARIES ARE APPROXIMATE.
3. PROPOSED LOCATIONS FOR TRAFFIC CALMING MEASURES ARE APPROXIMATE. FINAL LOCATION DETERMINATION WILL DEPEND ON RESULTS OF A TRAFFIC STUDY AND ACTUAL FIELD CONDITIONS.

LEGEND

- SPEED HUMPS
- TRAFFIC CIRCLES

DESIGNED KLV	DATE 01/17/08	*CITY OF FAIRBANKS, ALASKA* ***ENGINEERING DEPARTMENT***	**HAMILTON ACRES–SHANNON PARK TRAFFIC CALMING PILOT PROJECT MAP OF PROPOSED MEASURES**	*FIG.* **1**
DRAWN KLV	SCALE 1"=800'			
CHECKED RHP	FILE HA&SP_kv			

Section 2 – Temporary Speed Hump Program

2a. Introduction

Traffic Calming is a growing concern throughout the United States and Europe. Speeding and unsafe driving habits are becoming a major concern with the public. Excessive speeding and unsafe driving habits can threaten the safety and livability of neighborhoods. In order to address these concerns, the first step of the Municipality's Traffic Calming Program is a quick response approach and is considered a short term solution. Temporary speed humps fit the need of this first phase of the Municipality's Traffic Calming Program. The Program's main purpose for temporary speed humps is not to solely reduce speed, but to give neighborhoods an idea of what a speed hump is before the possible implementation of phase 2 of the Traffic Calming Program – placement of permanent speed humps. Temporary speed humps are intended for a two season maximum installation time period. This allows time for determination of an appropriate permanent fix.

Temporary speed humps are 14 feet in length and varies to a maximum of 3 inches in height.

2b. Street Criteria

Temporary speed humps will be installed on a priority basis based on speed and volume of the identified roadways. Due to the overwhelming requests for temporary speed humps, requests un-

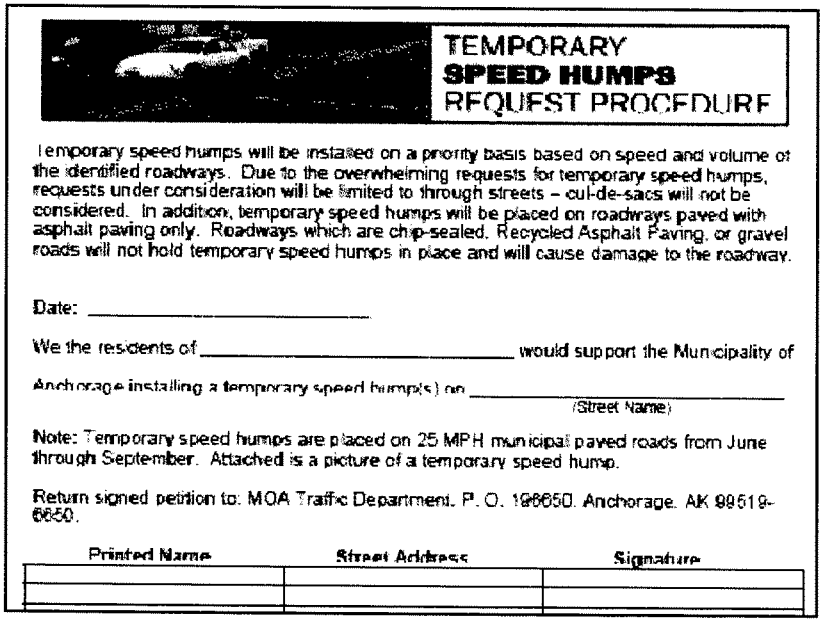
der consideration will be limited to through streets with a posted speed limit of 25 miles per hour or less. Cul-de-sacs and dead ends will not be considered. In addition, temporary speed humps will be placed on roadways paved with asphalt paving only. Temporary speed humps cannot be placed on the following roadway surface types:

- chip sealed,
- Recycled Asphalt Paving,
- or gravel roads.

These road surface types will not hold temporary speed humps in place and will cause damage to the roadway as well as increased call-outs for the speed hump maintenance crews.

2c. Petition

When a request is submitted to the Traffic Department, the requestor will be sent a petition form which will outline the temporary speed hump process. In addition, a map or other descriptive information will be sent which details the area to be canvassed for concurrence signatures. The petition will ensure residents in the area are aware of the temporary speed hump request and are in favor of the installation of the devices. Consideration of temporary speed hump installation will proceed only if a minimum of 51% of the residents concur with their installation (one signature per household).



TEMPORARY SPEED HUMPS REQUEST PROCEDURE

Temporary speed humps will be installed on a priority basis based on speed and volume of the identified roadways. Due to the overwhelming requests for temporary speed humps, requests under consideration will be limited to through streets – cul-de-sacs will not be considered. In addition, temporary speed humps will be placed on roadways paved with asphalt paving only. Roadways which are chip-sealed, Recycled Asphalt Paving, or gravel roads will not hold temporary speed humps in place and will cause damage to the roadway.

Date: _____

We the residents of _____ would support the Municipality of Anchorage installing a temporary speed hump(s) on _____ (Street Name)

Note: Temporary speed humps are placed on 25 MPH municipal paved roads from June through September. Attached is a picture of a temporary speed hump.

Return signed petition to: MOA Traffic Department, P. O. 196650, Anchorage, AK 99519-6650.

Printed Name	Street Address	Signature

Petition currently used by the MOA.

2d. Data Collection

Once the petition is received in the Traffic Department, data collection will occur. Collection will include volume and speed counts for the requested roadway. The data will be collected on regular weekdays and not on holidays or weekends.

Data Technicians assemble volume study using pressure-activated tubing attached to a digital vehicle counter.

The Traffic Department must have BOTH the signed petition and the collected data before a neighborhood is considered for temporary speed hump installation.

2e. Speed and Volume Criteria

The Traffic Department reviews all data collected for each requested road. The following criteria must be met before speed hump installation is considered:

- **Criteria 1**—500 vehicles per day and 85th percentile speed greater than 25 mph.

or

- **Criteria 2**—Less than 500 vehicles per day and 85th percentile speed greater than or equal to 30 mph.

The volume and speed criteria shown above target the majority of traffic using a given roadway. The 85th percentile speed is the speed at or below which 85 percent of the motorists drive on a given road (in good conditions) and is the speed at

which motorists feel safe traveling. When 85th percentile speeds exceed the posted speed, traffic calming measures are an appropriate method to help reduce speeds.

2f. Placement

Many physical constraints dictate the placement of temporary speed humps. Compared with permanent speed humps, more latitude exists for the use of temporary speed humps due to their placement during summer months only. Installation of temporary speed humps begins in May each year and removal must take place prior to snowfall; therefore, all of the humps must be removed by October 15th each year. The following is a list of placement constraints:

- Curves
- Steep grades
- Driveway location
- At least 50 feet away from intersection

For all areas outside ARDSA, the purchase, installation, and maintenance of temporary speed humps is the responsibility of the specific service area. The Traffic Department, will work with each service area to determine if the humps are warranted as well as locations for installation. Speed hump type and design must conform to Traffic Department requirements (14 feet in length by 3 inches in height) and installed per manufacturers specifications. All work in the right-of-way must have a right-of-way permit before work can take place. A right-of-way permit can be obtained form the Municipality of Anchorage Right-of-Way Section (343-8240).

By: Mayor Thompson
Introduced: November 19, 2007

RESOLUTION NO. 4302

A RESOLUTION STATING THE CITY'S LEGISLATIVE PRIORITIES FOR THE SECOND SESSION OF THE 25th LEGISLATURE

WHEREAS, providing an advance statement of the City's legislative priorities and capital project requests may assist the Governor and legislators in the preparation of the state FY 08-09 budget; and

WHEREAS, public hearing has been held on this Resolution,

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF FAIRBANKS RESOLVES AS FOLLOWS:

The 2008 Legislative Priorities of the City of Fairbanks are:

- Adoption of a permanent solution to the PERS/TRS pension crisis on terms similar to the interim measure adopted during the past legislative session.
- Establishment of sustainable municipal revenue sharing.

The City respectfully requests consideration of funding for the following capital projects to serve the community.

- Reconstruction/rehabilitation funds for key City streets.
- Replacement of the 1996 Fire Engine & 1994 Fire Ambulance.
- A Regional Police Firearms Training Range.

PASSED AND APPROVED THIS 19TH DAY OF NOVEMBER, 2007.

Terry Strle, Mayor
City of Fairbanks

ATTEST:

Janey Hovenden
City Clerk

APPROVED AS TO FORM:

Herbert P. Kuss
City Attorney